

New Patent Application
Docket No. 32860-000634/US

~~Patent claim~~ What is claimed is:

1. A gas and steam power plant ~~(1)~~ for water desalination, ~~having~~ comprising:
a heat recovery boiler ~~(9)~~ into which ~~the~~ hot exhaust gas ~~(7)~~ from a gas turbine ~~(3)~~ ~~can be~~ is directed and by means of which at least one of process and/or auxiliary steam for a steam turbine ~~(11)~~ can be generated by means of heat exchange by utilizing the heat energy contained in the exhaust gas ~~(7)~~, characterized by wherein a heat exchanger surface ~~(31)~~ which is arranged in the region of the cold end of the heat recovery boiler ~~(9)~~ and to which, for heating water ~~(35)~~ to be desalinated, in particular sea water, is adapted to receive at least a partial quantity of the water ~~(35)~~ to be desalinated can be fed and is adapted to can be heated by means of heat exchange with the exhaust gas ~~(7)~~.
2. The gas and steam power plant ~~(1)~~ as claimed in claim 1, ~~characterized in that wherein~~ the heat exchanger surface ~~(31)~~ is at the last heat exchanger surface in the heat recovery boiler ~~(9)~~ in the direction of flow of the exhaust gas ~~(7)~~.
3. The gas and steam power plant ~~(1)~~ as claimed in ~~either of claims 1 and 2~~, wherein ~~characterized in that~~ the outlet temperature of the exhaust gas ~~(7)~~ from the heat recovery boiler is about 80°C.
4. The gas and steam power plant ~~(1)~~ as claimed in ~~one of claims 1 to 3~~, ~~characterized in that wherein~~ the heat recovery boiler ~~(9)~~ is fired.
5. The gas and steam power plant ~~(1)~~ as claimed in ~~one of claims 1 to 4~~, wherein ~~characterized in that~~ the temperature of the exhaust gas ~~(7)~~ before the heat

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exchange with the heat exchanger surface ~~(31)~~ is within the range of between about 120°C and 150°C.

6. The gas and steam power plant as claimed in claim 1, wherein the water to be desalinated is sea water.
7. The gas and steam power plant as claimed in claim 2, wherein the outlet temperature of the exhaust gas from the heat recovery boiler is about 80°C.
8. The gas and steam power plant as claimed in claim 2, wherein the heat recovery boiler is fired.
9. The gas and steam power plant as claimed in claim 3, wherein the heat recovery boiler is fired.
10. The gas and steam power plant as claimed in claim 7, wherein the heat recovery boiler is fired.
11. The gas and steam power plant as claimed in claim 2, wherein the temperature of the exhaust gas before the heat exchange with the heat exchanger surface is within the range of between about 120°C and 150°C.
12. The gas and steam power plant as claimed in claim 3, wherein the temperature of the exhaust gas before the heat exchange with the heat exchanger surface is within the range of between about 120°C and 150°C.
13. The gas and steam power plant as claimed in claim 4, wherein the temperature of the exhaust gas before the heat exchange with the heat exchanger surface is within the range of between about 120°C and 150°C.
14. The gas and steam power plant as claimed in claim 7, wherein the temperature of the exhaust gas before

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the heat exchange with the heat exchanger surface is within the range of between about 120°C and 150°C.

15. The gas and steam power plant as claimed in claim 8, wherein the temperature of the exhaust gas before the heat exchange with the heat exchanger surface is within the range of between about 120°C and 150°C.

16. The gas and steam power plant as claimed in claim 9, wherein the temperature of the exhaust gas before the heat exchange with the heat exchanger surface is within the range of between about 120°C and 150°C.

17. The gas and steam power plant as claimed in claim 10, wherein the temperature of the exhaust gas before the heat exchange with the heat exchanger surface is within the range of between about 120°C and 150°C.

18. A system for water desalination, comprising:
means for receiving hot exhaust gas from a gas turbine and for generating, by heat exchange utilizing heat energy contained in the exhaust gas, at least one of process and auxiliary steam for a steam turbine, wherein a relatively cold end of the means is adapted to receive at least a partial quantity of the water to be desalinated and is adapted to heat the water by heat exchange with the exhaust gas.

19. The system as claimed in claim 18, wherein the relatively cold end of the means includes a last heat exchanger surface in the means, in a direction of flow of the exhaust gas.

20. The system as claimed in claim 18, wherein an outlet temperature of the exhaust gas from the means is about 80°C.

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21. The system as claimed in claim 18, wherein the means is fired.

22. The system as claimed in claim 18, wherein a temperature of the exhaust gas before the heat exchange with the heat exchanger surface is within the range of between about 120°C and 150°C.

23. The system as claimed in claim 18, wherein the water to be desalinated is sea water.